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SALICYLAMIDE PURPURA

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The purpose of this article is to draw attention to a thrombocytopenic purpura which has resulted from the taking of salicylamide.

This drug is advertised in the lay press as 'R12' and claims are made for it as a drug which 'not only relieves the pain of rheumatism but actually reduces swelling by dispersing the uric acid accumulation . . . Locked joints become free again.' It is further said to be 'absolutely harmless'. The drug was self-administered in the two cases which came under the author's attention, and the aetiology of cases presenting with a severe haemorrhagic episode may prove baffling, especially as patients are usually loath to admit to taking such self-prescribed remedies.

PHARMACOLOGY

The substance, salicylamide or ortho-hydroxybenzamide, was discovered in 1843, but its use in medicine was first suggested by Baas [1] in 1890. Little was heard of it from that time till 1946, when its use in clinical medicine was revived, principally on the Continent. It was early found by Meyer [2] to have powerful narcotic properties for amphibia—to be more narcotic, indeed, than ethyl alcohol, chloral or acetone. Ichniowski and Hueper [3] also observed narcotic effects after parenteral administration in rats—it was found to be less toxic than aspirin by this route of administration. Perorally, these workers found salicylamide to be of the same order of toxicity as aspirin in acute experiments in rats. In chronic oral experiments in rats, lasting 13 weeks, no anatomical or histological lesions could be found *post mortem* attributable to salicylamide. They did, however, in the salicylamide-treated rats observe leucopenia in 3 out of 20 rats and depressed leucocyte counts (not amounting to leucopenia) in all except 2. No platelet or bone-marrow studies were performed in these experiments, but the prothrombin time was estimated; no hypo-prothrombinaemia was observed.

Kase [4] has reported renal damage with albuminuria and nitrogen retention in dogs, and Holtz and Drebinger[5] in cats; but no information relating to nephrotoxic effects in man has been found in the literature.

The action of salicylamide as an analgesic and antipyretic (if it in fact possesses these pharmacological actions) would not seem to depend on its break-down to the salicyl radicle in the body, since the above w. rkers[3] were unable to detect (by the method of Brodie, Udenfriend and Coburn [7]) the free salicyl radicle in the blood of their rats. Bray,[6] in the course of a comprehensive study of the metabolic pathways of various substituted aromatic compounds, of which salicylamide was one, found that in the rabbit only 4-7% underwent hydrolysis and there was little or no break-down to free salicylic acid (0-1%). Much is excreted conjugated to glucuronic acid as 2 carbamyl-glucuronides, and a fair amount conjugated with sulphuric acid as 'ethereal sulphate'. If, as is asserted,[8] salicylic compounds are dependent for their action on being broken down to free salicyl radicle in the body, then it seems likely that whatever pharmacological properties salicylamide has, its mode of action is entirely different from that of the salicylates.

Considerable work has still to be done to evaluate the place of salicylamide in modern therapeutics; well-documented articles on its clinical use are very scanty and come principally from the Continent of Europe.[5,9–12] Holtz and Drebinger[5] mention agranulocytosis as a possible complication but state they have not encountered it even using salicylamide in high dosage. They do not mention thrombocytopenia or haemorrhagic phenomena. Only one previous case record of thrombocytopenic complication has been found in the literature (Stettbacher [13]) and its resemblance to the 2 cases to be described is very striking. All 3 occurred in women following self-administration of the drug; all presented with widespread ecchymotic lesions and haemorrhagic lesions in the mouth; perhaps most important, all

showed thrombocytopenia and leucopenia resulting from toxic damage to the marrow.

CASE HISTORIES

Following is a resumé of the salient features of Stettbacher's case. The patient, a 48-year-old woman, took 5 g. of salicylamide daily for 10 days, resulting in the development of tinnitus. She discontinued the drug, to recommence later with 3 g. daily, and after a further 8 days on this dosage she took 1·5 g. daily for 48 days; a total of 144 g. in 3 months. Epistaxis, severe bruising on slight trauma, and mouth lesions then occurred and the patient was admitted to hospital.

Investigations showed a profound thrombocytopenia, a bleeding time of over 20 minutes, and a strongly-positive Hess's test. Examination of the bone marrow showed depression of the myeloid series, and maturation arrest of the megakaryocytes. Recovery was complete in 3 weeks with supportive measures only.

Present Cases

Case 1. Mrs. McN., housewife, aged 57. This patient was admitted to hospital in August 1952 complaining of large bruises all over, a petechial rash for more than 10 days, and haematuria for 2 days. Lesions in the mouth had appeared the day before admission. She had also noticed slight nasal bleeding and that her sputum (from a long-standing chronic bronchitis) had been blood-stained for some days. There was no pain, burning or frequency associated with the haematuria.

The patient gave a history of chronic bronchitis and chronic rheumatism (mainly in the form of fibrositis of the shoulders and lumbar region) for many years, and it was for the latter condition she began taking the salicylamide ('R12') in the prescribed dosage. In this way she consumed approximately 600 tablets or 300 g. in 50 days. (The prescribed minimum dosage on the package is 12 tab' ts daily, with no maximum daily or total dosage stated.)

On examination the patient was found to be covered in a purpuric rash and showed massive ecchymotic areas all over, but particularly on the legs and abdomen. The buccal mucosa and tongue showed several blood-filled bullae, some of which were broken and presented raw bleeding ulcers. No lymphadenopathy was present, nor were the liver or spleen enlarged. Hess's test was strongly positive, and the bleeding time greater than 12 minutes. An estimation of the prothrombin index at this time gave a value of 101%, and a blood count showed the following results: Haemoglobin 8·7 g.%, erythrocyte count 2·74 millions per c.mm., haematocrit 26%, MCV 94·0 c.μ., MCHC 33·5%. The total leucocyte count was 2,600 per c.mm., with the following differential count: neutrophils 60%; monocytes 2%; lymphocytes 37%; eosinophils 1%. Platelets numbered less than 10,000 per c.mm.

A bone-marrow examination done on two occasions at two different sites, showed marked hypocellularity (6,000 and 11,000 nucleated cells per c.mm. respectively) and hypoplasia of all elements, the majority of the cells present being lymphocytes. Treatment was by blood transfusion and the exhibition of ACTH. Recovery was rapid, and 48 hours after the commencement of the ACTH the Hess's test became negative and the platelets rose to 90,000 per c.mm. Red cells disappeared from the urine, and no fresh bruising or haemorrhage occurred. The mouth lesions healed rapidly and had practically disappeared in 6 days. After 11 days of ACTH therapy the peripheral blood count was as follows: Haemoglobin 12·3 g.%, erythrocytes 4·03 millions per c.mm., haematocrit 39%, platelets 500,000 per c.mm. After 13 days the ACTH was stopped. A further bone-marrow examination now showed an almost complete return to normal. The patient has since remained clinically well.

Case 2. Mrs. O., housewife, aged 61 years. This patient gave a history of painful joints since 18 months ago, the joints principally affected being the knees, fingers, and toes. At this time she had a course of injections (the precise nature of the drug given is not known). Four months before admission she began taking salicylamide as 'R12' in the prescribed dosage.

On admission in November 1952 the patient complained of epistaxis for 2 months and a petechial rash for 1 month. These symptoms had become progressively worse, and on admission large ecchymotic lesions were present all over, with lesions in the mouth and on the conjunctivae. Hess's test was positive; the bleeding time was greater than 8 minutes. A blood count at this time showed the following: Haemoglobin 12·6 g.%; erythrocytes 3·33 millions per c.mm.; total leucocyte count 1,600 per c.mm.; differential count: neutrophils 53%, monocytes 6%, lymphocytes 33%, eosinophils 6%, and basophils 2%. Less than 10,000 platelets per c.mm. were present. Examination of the bone-marrow revealed a hypocellular marrow with hypoplasia of all elements. With supportive measures (blood transfusions) and anti-histamine therapy an uneventful recovery took place. The possibility that the previous course of injections (possibly gold) might have an aetiological connection with the purpura in this case cannot be excluded, but it does not seem likely in view of the time-lapse of 18 months and the prompt recovery on cessation of salicylamide medication.

CONCLUSIONS

Another drug must be added to the ever-increasing list of those compounds which are capable of inducing blood dyscrasias.

The mechanism in the case of salicylamide appears to be direct marrow depression, affecting principally the megakaryocytes and myeloid cells. Stettbacher [13] attempted to show sensitivity in his patient by administration of a test dose and following the platelet level at 4-hourly intervals thereafter. No fall was observed in the course of 24 hours. We attempted skin tests with the substance in our first case, but no sensitivity could be demonstrated. We also repeated Ackroyd's experiments [14] relating to the *in vitro* instability of platelets from cases of sedormid purpura, when suspended in plasma containing the offending drug. Platelets from our first patient were suspended in various concentrations of salicylamide in both saline and plasma. Controls were set up in normal plasma and saline. No difference in the degree of agglutination or lysis of platelets was observed between the tests and controls. Finally, the marrow studies suggest a direct action on haemopoietic tissue, rather than a peripheral sensitivity reaction.

SUMMARY

Two cases are presented which showed a thrombocytopenic haemorrhagic syndrome following prolonged self-administration of salicylamide ('R12'). The pharmacology of salicylamide is reviewed, and a note added in conclusion on the probable mechanism of the thrombocytopenia in these cases.

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South African Medical Journal

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VAN DIE REDAKSIE

MASELS

Die maselvirus word deur vogdruppeltjies uit die lugweë versprei en in internasionale studies oor siekte-toestande word masels derhalwe as 'n asemhalingsiekte bestempel. Die virus beland in die lugweë en dring deur die limf tot in die bloed (*viraemia*) en uiteindelik tot in die retikulo-endoteelstelsel. 'n Paar dae voordat die uitslag verskyn, ontwikkel 'n tweede viremie. Die bloed bly aansteeklik tot 1 of 2 dae na die uitslag.[1] Binne 2 dae nadat die uitslag verskyn neem die viremie af na mate die teenliggame vermeerder. As die uitslag eers geheel en al uitgebreek het, kan die siekte nie maklik oorgedra word nie;[2] ná hierdie stadium is die beskerming teen sekondêre bakteriese besmetting die grondigste rede om maselpasiënte af te sonder.

Masels op sigself is selde noodlottig; kragteloosheid of sterfgevalle is aan komplikasies wat intree te wyte. Dit word beweer dat meer as 90% van die sterfgevalle in die Verenigde State die gevolg van bakteriese longontsteking is. In baie dele van die wêreld, en op verskeie tye, kan otitis media of ander komplikasies die uitstaande kenmerke wees. Sover dit hierdie komplikasies aangaan, is hul beloop deur die antibiotika verander. Vir maselharsingontsteking, wat gelukkig selde voorkom, is antibiotika-terapie egter van geen waarde nie, alhoewel groot dosisse gamma-globulien gepaard met ander maatreëls (vloeistowwe, elektroliete, koorsweermiddels, kalmeermiddels en suiging om verstikking te verhoed) waardevol is.[3] Die gebruik van gamma-globulien as 'n voorbehoedmiddel weer nie noodwendig harsingontsteking af nie.

In die Westerse lande het die sterftesyfer vir masels opvallend gedaal. Dit word algemeen aanvaar dat hierdie daling 'n aanvang geneem het voordat sulfonamiede en antibiotika in gebruik was. Gevolgtrekkings i.v.m. die siektetoestand in en selfs die sterftesyfers van verskillende lande moet nie oorhaastig gemaak word nie want lande verskil in die deeglikheid waarmee hul verslae oor masels opstel.

Babbott en Gordon [2] het 'n omgewingsleer-ontleding gemaak d.w.s. 'n georganiseerde ondersoek ingestel na alle faktore i.v.m. die siekte se gedrag. Hul lê bewyse voor wat die stelling staaf dat die siekte deur 'n virus veroorsaak word en verduidelik hoedat dit in die laboratorium ondersoek is. Die virulens kan in die laboratorium verander word maar dit skyn asof die graad van kwaadaardigheid waarmee 'n masel-epidemie uitbreek eerder aan sekundêre bakteriese infeksie, die mate van

EDITORIAL

MEASLES

The virus of measles is spread in droplets from the respiratory tract, and the disorder is therefore classified as a respiratory disease in international morbidity studies. The virus enters the respiratory tract and passes through the lymphatics into the blood (viraemia) and eventually into the reticulo-endothelial system. A second viraemia develops some days before the rash appears. The blood remains infective until 1 or 2 days after the exanthem.[1] The viraemia diminishes within 2 days after the rash appears, as antibodies increase. Once the rash has fully developed the disease is not easily transmitted,[2] and after this stage the best reason for isolating patients with measles is to protect them from secondary bacterial infection.

The complications in measles are determining factors in causing death or debility, measles itself being seldom fatal. In the United States it is stated that more than 90% of deaths from measles are due to bacterial pneumonia. In many parts of the world, and at different times, otitis media or other complications may be prominent features. The introduction of antibiotics has altered the picture so far as these complications are concerned, but for measles encephalitis, which fortunately only occurs infrequently, antibiotic therapy is without value, though large doses of gamma globulin with other measures (fluids, electrolytes, antipyretics, sedatives, and suction to prevent asphyxia) are of value.[3] The use of gamma globulin as a prophylactic agent does not necessarily prevent encephalitis.

In the western world there has been a conspicuous decline in the mortality from measles. It is generally agreed that the declining trend began before the introduction of sulphonamides and antibiotics. Caution, however, is necessary in drawing conclusions about morbidity and even mortality statistics in different countries. Measles is reported in varying degrees of thoroughness in different parts of the world.

An ecological analysis of measles, i.e. an organized inquiry into all factors relating to the behaviour of the disease, has been presented by Babbott and Gordon.[2] They marshall evidence that a virus is the cause of the disease, and indicate how it has been studied in the laboratory. The virulence can be altered in the labora-

immuniteit en geneeskundige behandeling onderworpe is. Dit is terdeë bewys dat tydens onlangse epidemies skadelike kieme vir die meeste sterfgevalle en komplikasies verantwoordelik was. Benewens faktore wat by die gasheer te vinde is (immuniteit) is die sosio-ekonomiese en biologiese agtergrond van belang. Skole het 'n groot aandeel in die verspreiding van die siekte. Kinders op skool wat in epidemies betrokke is, dra die masels oor aan hul broertjies en sussies tuis en die meeste komplikasies kom by kinders van voorskoolgaande ouderdom voor.

Aktiewe immunisasie met die gekweekte virus blyk onbevredigend. Beter resultate word met passiewe immunisasie verkry bv. met gamma-globulien (wat serum van herstellende pasiënte of ‚pooled' plasma of serum vervang het). Dit kan gebruik word tydelik om òf algehele beskerming òf gedeeltelike immunisasie te bewerkstellig. Laasgenoemde verseker dat die maselaanval lig is sodat die pasiënt die gevare verbonde aan 'n swaar aanval vryspring maar nogtans die aktiewe immuniteit ontwikkel wat op 'n aanval volg. Algehele beskerming word vir kinders tussen 4 maande en 36 maande aangeraai asook vir swak kinders en vatbare volwassenes. Vir ander kinders word oor die algemeen gedeeltelike immunisasie aanbeveel omdat hierdie passiewe immunisasie verbygaande van aard is en die immuniteit wat daarop volg met dié van 'n ligte maselaanval kan vergelyk. Dit word gemeen dat gamma-globulien nie die virus van homoloë serumgeelsug oordra nie en dít word derhalwe veiliger beskou as serum van herstellende pasiënte of ‚pooled' plasma of serum.

Dit kom voor asof isolasie en kwarantyn die verspreiding van masels maar in 'n geringe mate beheer. Die meeste gesaghebbendes is dit eens dat dit maar bra min help om skole tydens epidemies te sluit; die aanbeveling is dat kinders elke dag by die skool ondersoek moet word en diegene met ‚verkoues' of koors geïsoleer word.

Die daling in die maselsterftesyfer wat in Suid-Afrika en ander lande bespeur is—maar wat op baie groter skaal vir die blanke-syfer geld—kan aan 'n verandering in die virus te danke wees of dit kan meer regstreeks in verband gebring word met die daling in die sterftesyfers vir longontsteking en ander asemhalinginfeksies. Die sterftesyfers vir kinkhoes, waarvoor longontsteking-komplikasies verantwoordelik is, toon 'n dergelike daling.

Die standpunt word deur sommige gehuldig dat masels net soos pampoentjies, waterpokkies, en rooihond in die toekoms somaar 'n alledaagse ongerief van die kinderjare sal wees en slegs af en toe onder buitengewone omstandighede 'n noemenswaardige gebeurtenis.

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tory but the differing severity in outbreaks of measles appears to depend more upon the secondary bacterial infection, the degree of immunity, and the medical management. Most deaths and complications have been amply demonstrated in recent epidemics to result from pathogenic bacteria. In addition to factors in the host (immunity) the physical, socio-economic and biological environment are important. Schools play a great part in the spread of the disease; from the children involved in school epidemics measles spreads to their brothers and sisters at home and it is at pre-school age that complications are most frequent.

Active immunization with cultivated virus has not proved satisfactory. Better results have been obtained by passive immunization, for example with gamma globulin, which has superseded convalescent serum and pooled plasma or serum. It can be used to induce either temporary complete protection or a partial immunity which causes the attack of measles to be mild in character so that the patient while escaping the jeopardy of a severe attack still develops the active immunity which follows the attack. Complete protection has been advised for children between 4 months and 36 months old and for debilitated children and susceptible adults. In other children, because of the transient nature of this passive immunity, attenuation is generally to be preferred. The immunity which then follows is considered to be comparable to that following unattenuated measles. Gamma globulin is believed not to transmit the virus of homologous serum jaundice, and it is therefore regarded as a safer preparation than convalescent serum or pooled plasma or serum.

Isolation and quarantine have proved to be of little use in controlling the spread of measles. Most authorities also hold that school closure is of little value during an epidemic;[2] daily examination of the children at school and isolation of those with 'colds' or fever is advocated.

The decline of measles mortality, which is apparent in South Africa as well as other countries but is much more pronounced in the white population, may be due to a change in the virus, or it may be more directly associated with the corresponding decline in mortality from pneumonia and other respiratory infections. A similar decline has taken place in whooping-cough mortality, which is also commonly due to pneumonic complications. The view is held by some that one day measles, like mumps, chickenpox and rubella, may become an accepted inconvenience of childhood, of special significance only occasionally or under unusual conditions.

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AGRICULTURE AND HEALTH

In this issue is published the last of a series of 12 articles on the Agricultural Foundations of Nutrition, by F. W. Fox, D.Sc. Lond., of the South African Institute for Medical Research, Johannesburg.

Food, with air, water and protection against cold, was a basic necessity of life for primitive man. It was subject to scarcity, and the procuring of food must have occupied much of his time, whether by hunting, fishing and the

search for edible wild fruits and vegetables, or later by the practice of agriculture. At first the individual family or tribal community must have grown their own food or caught their own fish or game, but as civilization advanced gradually more and more of the food the people needed was grown d: n sold by specialized agriculturalists. A similar change took place in distribution. At first every town and village was supplied from its own countryside, but in course of time and with improvement in transport facilities the system was elaborated whereby the needs of civilized communities were met with food from distant parts of their own countries or from other countries, some of them at the other end of the world. In primitive times failure of the local harvest would result in famine. With national and international systems of food production and transport, abundance balances scarcity and famine is avoided; yet to the present generation famine is not unknown in countries like India, and, in time of war, in Europe.

The medical profession is intimately concerned with nutrition. Knowledge of the physiology of nutrition has advanced greatly in recent years and also knowledge of the ill effects of insufficient or unsuitable food and their manifestations in disease. All countries realize that proper nutrition is a fundamental requirement of their people and the production of food is not left merely to the unaided resources and uncontrolled initiative of the individual farmer or other producer, but becomes the subject of national policy; so also does the distribution and consumption of food. In the shaping of national policy in these respects medical counsel is being taken to a growing extent.

In the last resort all nutrition policy must depend on its agricultural foundations, in which therefore the members of the medical profession are directly interested. The South African peoples are afflicted with nutritional disorders characteristic both of the white and black populations of the world; and the agricultural tasks of South Africa include problems both peculiar to itself and common to other countries. South Africa though not in fact entirely self-supporting in its nutrition is potentially able to feed its growing population provided that by diligent attention to the complex problems involved the fertility and productiveness of its soil are maintained and increased.

Dr. Fox's series of articles are a valuable contribution to knowledge of the position of food production in this country and the problems that have to be faced. It is satisfactory to know that the Institute for Medical Research proposes to reprint them in a single brochure.

The completion of the series coincides with Dr. Fox's retirement from the position at the Institute he has held with great distinction for many years. He joined the Institute as head of its Biochemical Section, which he was largely instrumental in founding. In more recent years he has devoted homself to the subject of nutrition. His report on scurvy in Bantu mine workers is well known, and also his valuable analyses of various South African articles of food and his field surveys on the problems of malnutrition. Dr. Fox has been a member of the Nutrition Council and the Soil Conservation Board since their inception, and he is chairman of the Dietary Standards Committee of the former. The medical profession will be glad to know that on his retirement from the Institute for Medical Research Dr. Fox has been appointed to a professional post as member of the Human Biochemistry Unit of the National Nutrition Research Institute, which was set up in October last under the Council for Scientific and Industrial Research.

LYMPHOPATHIA VENEREUM IN THE SOUTH AFRICAN BANTU FEMALE

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Lymphopathia venereum is a venereal disease not well known in this country. Amongst Europeans it is extremely rare, but an investigation undertaken at the Baragwanath Hospital reveals that this is not true of the South African Bantu.

Historical. The disease was first described as a specific entity by Durand, Nicholas and Favre in 1913. Further knowledge of it was developed by Frei, who introduced a specific intradermal test in 1925. In 1930 Hellerstrom and Wassen discovered the causative virus. Pus obtained by them from enlarged inguinal lymph nodes of Frei-positive cases was injected cerebrally into monkeys and a meningo-encephalitis produced. From these experimental lesions a virus was obtained with which the disease could be transmitted to animals.

Present Investigation. For a long time the gynaecological wards at Baragwanath Hospital were presented with several unusual pathological conditions of the vulva where no diagnosis could be made. The patients were treated empirically with antibiotics without improvement. A diagnosis of lymphopathia had been suggested in these cases, but no positive response to the Frei test could be evoked. After consultation with the South African Institute for Medical Research, a new batch of antigen was obtained, which in 2 cases gave a strongly positive Frei test. Since then a careful study has been made of 16 fully investigated cases.

All the cases studied were admitted to the hospital under erroneous diagnoses, and only because one was on the look-out for the disease, was the correct diagnosis ultimately made.

Lymphopathia venereum affects relatively young people, especially at the age of the greatest sexual activity. Of the 16 cases 12 were under the age of 40. It is generally agreed that in the vast majority, infection is transmitted through sexual intercourse. The disease occurs in

patients who are prone to sexual promiscuity, and it is therefore not unreasonable to expect that in many cases the other venereal diseases would accompany the lymphopathia. This was borne out in the present investigation, where 5 cases of the 16 were definitely known to have suffered also from both syphilis and gonorrhoea.

The primary lesion of lymphopathia venereum is a small, erosive herpetiform vesicle or infiltrated papule, which is usually painless and appears 2-5 days after exposure on any part of the external genitalia, vagina or cervix. Rapid spontaneous healing takes place and, because of its painless nature, the patient is often unaware of the lesion and the doctor is unlikely to encounter it.

CLASSIFICATION

The clinical features of the disease can conveniently be grouped in the following proposed classification:

(1) Bubonic
(2) Vulval and Clitoral
  (*a*) ulcerative.
  (*b*) elephantiac.
  (*c*) perforating.
(3) Rectal
  (*a*) early.
  (*b*) late.
(4) Destructive
  (*a*) fistula-in-ano.
  (*b*) recto-vaginal fistula.
  (*c*) vesico-vaginal fistula.

(1) *Bubonic.* Since lymphopathia is a disease of the lymphatic system it is not unreasonable to expect bubonic manifestations. Nevertheless, only 2 cases with tender fluctuant masses in the inguinal region were encountered. These represented the acute bubonic type and, if left untreated, the condition would almost certainly have passed into the chronic phase with multiple discharging sinuses, a not uncommon feature in cases of long-standing infection.

(2) *Vulval and Clitoral.* In this group there were 3 distinct types. The ulcerative and the elephantiac were not uncommonly encountered in the same patient. For many years any indolent ulcer of the vulva was called 'esthiomene'. Today this term is confined to the *ulcerative lesion* of lymphopathia (Fig. 1). The ulcer is usually situated in the region of the clitoris or on the surface of the labia minora. The base of the ulcer is usually covered with multiple irregular fleshy granulations, which may bleed if vigorously scraped. Puckering may be observed, which is an expression of the healing process. Occasionally a completely healed ulcer is encountered, exhibiting very marked fibrosis, the contractures of which present a spider's-web appearance.

The *elephantiac lesion* is the commonest vulval type (Fig. 2). Its most striking feature is lymphoedema involving the labia minora and clitoris. Multiple flattened areas are elevated to contrast with intervening sulci, thus imparting a lobulated appearance to the lesion. The sulci are the result of long-standing fibrosis and contracture.

In the *perforating type* the lesion consists of one or more punched-out perforations in the labia minora. These are either circular or oval and have clear-cut

Fig. 1.

edges, as if punched-out. Since lymphopathia is known to destroy involved tissues, it is not surprising that a lesion of this nature is encountered; however, in the perusal of the literature we have not found any description of this type.

(3) *Rectal.* Classically, lymphopathia attacks the rectal region more commonly than any other site. This is also true for the South African Bantu. The most vulnerable sites are the lymphatic channels along the utero-sacral ligaments. At first an effusion into these ligaments takes place; as the disease progresses the effusion is converted into a fibrotic process which encircles the rectum and produces the well-known picture of rectal stricture. Thus the rectum is initially attacked from without, and it is only in the later stages that the mucosa is affected. Generally one does not see the cases in the early stages, or when seen early the diagnosis is usually missed. Two early cases were

Fig. 2.

encountered in this series, and the diagnosis suspected (and later confirmed) simply because there was no response to antibiotic treatment.

The 2 *early cases* both presented with very gross infiltration along the utero-sacral ligaments and no other clinically detectable pathology. It is felt that if they had been left untreated they would ultimately have entered the chronic phase, with stricture and possibly fistula formation.

Eight *late cases* were encountered (constituting one-half of the series of lymphopathia under report) 3 with rectal stricture only and 5 with stricture and fistula formation. The rectal strictures were situated one or two inches from the anus and varied in thickness.

The presenting symptoms in these cases were: (1) passage of blood and mucus during and after defaecation, (2) pain in anus and rectum during and after defaecation (3) difficulty during defaecation, (4) progressive decrease in the diameter of the stools, and (5) alternating diarrhoea and constipation. There was gross mechanical obstruction to defaecation; yet despite this the general health remained good and there was no evidence of any interference with normal metabolic functions.

(4) *Destructive Type.* Alongside the reparative process in the nature of fibrosis, which is characteristic of lymphopathia, is a progressive process of destruction of tissue. There is a definite tendency towards the breakdown of involved tissues, with the result that sinuses and fistulae are produced, besides strictures.

Fistulae-in-ano and recto-vaginal fistulae. The posterior vaginal wall is much more commonly involved in the destructive process of lymphopathia than the anterior wall. Involvement of the anus may lead to the formation of single or multiple fistulae-in-ano. They are superficially situated and generally end blindly. It is not certain what part secondary infection plays in these destructive lesions.

Recto-vaginal fistulae were situated ½-1 inch from the anus; none were encountered higher up. They vary in size from that of a pin's head to 1-2 inches in diameter. The presenting features of these cases are very much the same as those described under rectal stricture but, in addition, a history of the passage of faeces *per vaginam* is often obtained. As a general rule, when the patient is constipated she passes stools *per rectum*, but during a bout of diarrhoea the faeces escape *per vaginam*.

Vesico-vaginal fistulae. Involvement of the anterior vaginal wall with the production of a vesico-vaginal fistula is rare in lymphopathia. Only one case occurred in this series.

DIAGNOSIS

The diagnosis of lymphopathia venereum is based on the clinical picture outlined above, confirmed by a positive Frei test. The test remains positive for many years, even after adequate treatment. It is stated that the test is positive in 90-95% of cases. It is carried out in the following manner:

With a tuberculin syringe 0·1 ml. of normal saline is injected intradermally in the anterior surface of the left forearm as a control, and an equal quantity of Frei-antigen, prepared from suppurative inguinal lymph nodes, into the right forearm (the injection must be intradermal; a subcutaneous one may produce a negative response). A positive response is manifested by erythema and induration, which reaches a maximum in 48-72 hours. It must be of the order of 1 cm. in diameter or more to be accepted as positive; it is often better felt than seen. The nodule persists for approximately one week, after which it gradually diminishes in size and eventually disappears.

In one case only, what was possibly a general reaction to the test ensued; the patient developed diarrhoea with blood and mucous in the stools. This, however, may have been coincidental.

Investigations

Frei Test. Every patient in the series gave a positive Frei test.

Stool Examinations. No significant results were obtained.

Proctoscopy and Sigmoidoscopy were carried out in all cases where there was no stricture. Eight cases were carefully sigmoidoscoped, the instrument being passed for 20 inches. No pathological condition was detected.

Blood Counts. The haemoglobin was estimated in all cases and no evidence of anaemia was found. The average haemoglobin level was 13·7 g.%. This finding is contrary to the statement of some authors that lymphopathia induces an anaemia (Wassen 1935). From the routine examination of every case it appears that lymphopathia *per se* produces neither leucocytosis nor leucopenia; but the former was evident in one case of secondary infection with salpingitis and another with basal pneumonia. In the differential white-cell count, the only significant feature was that 10 of 14 cases thus investigated had an eosinophil count of 4% or more. In only 1 of the 10 cases were ova of Ascaris encountered.

Liver Function Tests. The total proteins were all between 7 and 9 g.%. Of the 13 cases investigated, 10 had a definite reversal of the albumin/globulin ratio. Hyperglobulinanaemia may thus be a diagnostic aid in lymphopathia. The thymol turbidity was significantly raised in 12 of 14 cases investigated. Thymol flocculation was +++ or ++++ in 9 out of 12 cases, and all cases investigated gave a positive response to the Takata-Ara test. These tests substantiate the reversal of the albumin/globulin ratio. Their exact significance in the Bantu requires further investigation, but it is probable that lymphopathia venereum does produce these changes, and that they may be used as an aid in diagnosis.

Lumbar Puncture was performed in 3 cases only. These random samples did not reveal any deviation from normal, though changes have been described in the literature (Finberg 1949).

TREATMENT

From time to time, various drugs have been used in the treatment of lymphopathia. Frei antigens (Gay-Prieto 1932), tuberculin, antimony (Shaffer *et al.* 1938) and fuadin were all tried, with unsatisfactory results. Then came a phase of heroic radical surgical onslaught, such as permanent colostomies and abdomino-perineal resections.

Sulphonamide Drugs. Many favourable reports on the effects of sulphonamides in lymphopathia have been published (Stein 1940), Schamberg 1941, Graham 1941). For this reason 15 cases in this series were tested against a course of sulphadiazine. In none of them was there any appreciable response.

Penicillin treatment was tried in 10 cases, with uniformly poor results.

Streptomycin was tried in only one case, without any response.

AUREOMYCIN THERAPY

Wong and Cox (1948) found that, although aureomycin had little or no viricidal activity *in vitro*, there was a remarkable protective effect in chick embryos and mice infected with the virus of lymphopathia. Wright *et al.* (1948) concluded that aureomycin is the drug of choice for lymphopathia venereum. Robinson *et al.* (1950) treated 9 cases with unimpressive results; there was some improvement in 3 only. Alergant (1950) presents 6 cases, with improvement in only 4.

Adams (1948) writes: 'The unsatisfactory results obtained with palliative measures in the treatment of lymphopathia in Baltimore led to the practice of more aggressive measures. In line with generally accepted principles that inflammatory conditions of a different aetiology and involving other parts of the bowel should be subjected to resection, removal of the rectum for lymphopathia was attempted, and resection was performed.'

Thus the reports on the efficacy of aureomycin therapy are very conflicting. It is possible that only certain strains of the lymphopathia virus respond to aureomycin. How would the disease react in the South African Bantu? To answer this question all the patients were subjected to aureomycin therapy.

Dosage. The optimum dosage of aureomycin is extremely difficult to determine. For purposes of standardization, all cases received 3 courses of treatment with a break of 4-6 days between the courses. Each course consisted of 250 mg. of aureomycin at 4-hourly intervals for 5 days, a total of 7½ g. In nearly every case the results achieved with one course were as good as with 3 courses. The effects of the drug were noted within 48-72 hours and whatever improvement occurred later was slight as compared with the initial response. It can generally be stated that the more acute the condition the more rapid the response.

Response to Aureomycin

Bubonic Type. In both cases the swelling resolved within 2-3 days. A residual brownish pigmentation remained in both cases, but there was no scarring. Thus the 2 cases of bubonic type, while not responding to sulphadiazine or penicillin, underwent a complete clinical cure with aureomycin within a short time.

Vulval and Clitoridal Type. Of the cases of this type the ulcerative cases responded best. The ulcers, which were insensitive to all other drugs used, healed completely within 2-5 days. Where the ulcers ran a more chronic course, radial scarring remained.

In the elephantiac cases the response was less dramatic. Nevertheless, in nearly every case the lymphoedema was considerably reduced and the persistent discharge disappeared. What remains is a shrunken lymphoedematous lesion, which is non-tender, and symptomless.

Of the cases of this type the least response was noted in the perforating cases. It is in fact not to be expected that an anatomical defect of this nature would be corrected by any drug. Aureomycin in these 2 cases did not materially alter the punched-out holes in the labia, although there was a considerable reduction in the swelling of the labia minora in both cases. The vaginal discharge disappeared.

Rectal Type. The diagnosis in the 2 early cases was only considered after intensive penicillin and sulphadiazine therapy had failed to make the slightest difference

to the condition. On further investigation both cases gave a very strongly positive Frei test. They were then treated with aureomycin. Within 3-4 days the utero-sacral infiltration had almost completely disappeared in both cases, and pain and tenderness on rectal examination had disappeared. It thus seems that in reasonably early cases of the early rectal type a complete cure is possible with aureomycin.

The late rectal cases represent a very advanced stage of lymphopathia venereum, with very gross fibrosis. Until the introduction of aureomycin there was no satisfactory treatment for these patients, except perhaps an extensive surgical procedure. Although one cannot claim a cure with aureomycin, the results obtained show very considerable palliation. Firstly, in all cases complete disappearance of symptoms took place. Pain, difficulty on defaecation, and the passage of blood and mucus in the stools, disappeared in all cases where these were the presenting symptoms. A considerable increase in the diameters of the stools were noted in all cases where a previous narrowing had been complained of. Anatomically, the rectal stricture although still present, imparted a softer feel to the examining finger. Secondly, after aureomycin therapy any surgical procedures undertaken in dealing with the stricture yielded good functional as well as anatomical results.

Destructive Type. In this group also aureomycin therapy is successful in the relief of symptoms. The pain, tenderness and discharge disappear. In recto-vaginal fistula the passage of faeces *per vaginam* ceases. Fistulae-in-ano, although anatomically still present, become asymptomatic.

A striking feature is that, although in none of the cases did the fistula close, the leakage *per vaginam* ceased after aureomycin therapy. The most striking response to aureomycin occurred in a case where spontaneous closure of a vesico-vaginal fistula took place. This case illustrates the importance of administering aureomycin in all cases of lymphopathia before operation, no matter what the nature of the lesion.

THE PLACE OF SURGERY IN LYMPHOPATHIA VENEREUM

Although there is no apparent necessity for heroic surgery in lymphopathia, certain minor surgical procedures are of great value.

The dilatation of rectal strictures in cases of lymphopathia is not entirely without hazard; sudden death due to rupture of the bowel has been recorded. Bleeding during a dilatation generally occurs fairly early in the procedure. It has been repeatedly noticed that after aureomycin therapy dilatation is a relatively easy procedure; there is seldom any bleeding if the dilatation is not taken beyond a no. 20 dilator. This is probably due to the softening of the stricture which occurs after aureomycin. Five cases were dilated, with gratifying results.

Cases of fistula-in-ano were treated by complete excision after aureomycin therapy. All healed well.

Recto-vaginal fistulae were repaired in the usual manner. After aureomycin therapy the fistulae were excised and converted into third-degree tears. The usual perineal reconstruction was then done. Healing was by first intention. Three cases were thus treated.

Although there does not appear to be any need for surgery to the vulva, for psychological reasons excision of a lymphoedematous portion is justifiable. Satisfactory cosmetic results are achieved.

PATHOLOGY

Although the tissue response to invasion by the agent of lymphopathia venereum tends to follow a definite pattern, the microscopic appearance is not pathognomonic. The conservative pathologist reports that the appearance of the tissue is consistent with, but not diagnostic of, this infection.

In the elephantiac type the epithelium generally shows considerable hyperplasia with hyperkeratosis. The corium is oedematous and infiltrated with leucocytes, plasma cells, lymphocytes and occasional eosinophils. In some sections giant cells with peripherally situated nuclei are present, but tubercle formation and caseation are absent, which distinguishes the condition from tuberculosis.

In the early phase oedema and cellular infiltration are the predominant features. As the disease progresses fibroblasts appear and subsequent sclerosis and hardening of the involved region occurs. As a direct result of fibrosis, obstruction to the lymphatic flow occurs. Histologically, therefore, dilatation of lymph channels is a prominent feature in the more advanced case.

The above features have been noted in most of the sections examined, irrespective of the site involved.

SUMMARY AND CONCLUSIONS

1. An investigation of lymphopathia venereum in the South African female Bantu is presented.

2. A classification based on the clinical material is suggested.

3. The clinical features are described and the diagnosis is discussed.

4. Various treatments are outlined. It appears that aureomycin is the drug of choice in the treatment of the condition in the South African Bantu.

5. Heroic surgery in lymphopathia appears to have an extremely limited field. Minor surgical procedures, aimed to restore the local anatomy to as normal a condition as possible, seems to be justifiable from both the functional and the psychological point of view.

6. Aureomycin should be administered to all patients before surgery is undertaken.

I wish to express my sincere thanks to Professor O. S. Heyns for the help and encouragement given to me, and to Dr. G. P. Charlewood who suggested this investigation and without whose help this publication would not have been possible.

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BILATERAL ORBITAL CYSTS OCCURRING IN A BANTU INFANT

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Orbital cysts are rare and, clinically, often present diagnostic problems.

The following case with bilateral giant orbital cysts is presented because no similar case can be found in the literature.

CASE REPORT

J.R., African child aged 8 months, admitted to Baragwanath Hospital, 2 September 1952.

The mother noticed a swelling over the bridge of the nose 6 months ago. At first the swelling was firm, but gradually it spread across the mid-line on both sides of the nasal bridge and became cystic. As the growth progressed it involved both eyes in turn, pushing them upwards and outwards. The child has to move its whole head in order to see an image.

Birth was normal. Since birth the general condition has been satisfactory and progress otherwise normal.

Examination revealed a well-behaved child, with prominent bilateral proptosis. The eyeballs were displaced laterally and there was a marked divergency of the visual axes. There was also a swelling in the midline, which bulged on coughing (see Figs. 1 and 2).

The ophthalmologist's report (I.B.T.) was as follows:

Orbits. Clinically the orbits appear slightly enlarged. There is marked swelling of the orbital tissues which is bulging the lids forwards and has caused the eyeballs to be pushed markedly laterally and forwards.

Figs. 1 *and* 2. Child as it appeared before operation. Note the large cysts medially with the marked displacement of the eyeballs.

Eyeballs. There is an extreme divergent strabismus due to displacement and rotation of the eyeballs laterally. The cornea is clear on both sides. The pupils are equal and react well. The fundi show bulging masses under the retinae on the nasal sides, giving the appearance of detachment of the retina, but due to indentation of the sclera. The discs are slightly distorted and show evidence of stretching of the optic nerves.

Aspiration of Cysts

On 9 September the cyst in the mid-line between the nasal bones was aspirated and cerebrospinal fluid was obtained. This was replaced by 10 c.c. of air, which on X-ray was found to be in the subarachnoid space. This central cyst was diagnosed as a meningocele.

On 15 September the orbital cysts were aspirated. The removal of 28 c.c. of clear yellowish fluid from the right cyst caused no deflation or softening of the left cyst. The left cyst contained 20 c.c. Air was inserted and the patient was X-rayed. The report (16 September) of the South African Institute for Medical Research on the cyst fluid was as follows:

> 'Total protein 0·9 g. per 100 c.c. Microscopic examination of the centrifuged deposit from this specimen showed a moderate number of erythrocytes and a few polymorphonuclears per high-power field.'

After aspiration the eyes were normal on examination but were somewhat sunken in large fat-free orbits. The cysts rapidly filled up and on the next day they were as tense as before the aspiration.

Operations for Removal of Cysts (S.S.)

The left cyst was removed under general anaesthesia on 16 October 1952. Anterior orbitotomy. Left medial canthotomy. The conjunctiva was cut on the nasal side, exposing a tense cystic tumour. The cyst tracked medially to the eyeball, between the muscle cone and the medial orbital wall, and was attached to the optic nerve. It extended as far posteriorly as the optic foramen. No defect of the orbital walls could be detected. The cyst was enucleated. The inferior oblique muscle was cut and re-sutured later. The conjunctiva was sewn and a dental dam drain was inserted. The canthotomy was repaired. The drain was removed on 18 October.

The right cyst was removed on 3 November 1952 by a procedure similar to that on the left side.

Except for slight orbital oedema the post-operative period was uneventful.

Histology. The cyst-wall showed the structure of oedematous granulations and fibrous tissue. No epithelial lining was observed. The origin of the cyst could not be determined.

Progress. After the operation the eyes resumed their normal straight position, but were somewhat unsupported owing to the lack of orbital fat. Vision appears normal, as the child is able to pick up small objects even with one eye occluded.

Duke-Elder [1] classifies orbital cysts as follows:

1. *Congenital cysts:* (*a*) Dermoids, (*b*) Cephaloceles, (*c*) Congenital cystic eyeball.
2. *Implantation cysts:* following penetrating orbital trauma.
3. *Haematic cysts:* following an intra-orbital haemorrhage.
4. *Parasitic cysts:* e.g. hydatid, cysticercus, filaria.

Figs. 3 *and* 4. Post-operative appearance of the child. The eyes are somewhat unsupported in the large fat-free orbits.

5. *Serous cysts:* hygromata.
6. *Mucous cysts:* from the para-nasal sinuses.
7. *Dental cysts:* invading the orbit from the antrum.
8. *Cysts of intra-orbital organs:* lacrimal gland (dacryops).

The case presented here in a Bantu infant appeared to be one of bilateral haematic cysts, most probably following haemorrhagic disease of the newborn.

The first description of haemorrhagic disease of the newborn, was that of Minot [2] (1852). The disease is characterized by an unusual tendency to spontaneous haemorrhage during the first week of life, usually 2nd-5th day. Townsend [3] in 1894 used the term 'haemorrhagic disease' to describe all cases of haemorrhage in the newborn in which no obvious cause could be found. This excluded cases due to trauma, sepsis, congenital syphilis, and blood dyscrasias such as haemophilia, congenital leukaemia and congenital thrombocytopenia.

Two cases of haemorrhagic disease of the newborn, presenting as unilateral proptosis, were described by Kessel and Williams.[4] In one of their cases there was a low prothrombin index, but the other case had normal haematological findings. The proptosis became less marked after a few days, and in one case had completely disappeared by the end of the third week.

Bilateral exophthalmos in the newborn following spontaneous delivery was reported as a rare occurrence by Kundert.[5] Fracture of the orbit with strangulation of the ophthalmic vein in the superior orbital fissure, retro-bulbar haemorrhage, subperiosteal haemorrhage, and injury of the cavernous sinus, have been considered as aetiological factors in previously reported cases (Edgerton,[6] Windham,[7] Harley [8]). Trauma produced by moulding of the head in its passage through the birth canal was believed to be a primary factor in all cases. The proptosis usually disappears as the haemorrhage absorbs, but may persist or even increase if the haemorrhage becomes encysted.

Pathology of Haematic Cysts. Retro-bulbar haemorrhage usually absorbs slowly owing to the poor blood-supply of the orbital fat. Another factor retarding absorption is the increased pressure in a closed space, which prevents the normal capillary dilatation so essential for hastening absorption. Very rarely the haematoma develops into an encapsulated cyst, remaining as an orbital tumour, which is known as a haematic cyst. The characteristic feature of this kind of orbital cyst is the absence of epithelial and endothelial lining. Structurally they have two coats, an outer fibrous layer, and an inner layer of granulation tissue, rich in capillaries and in which there may be foam cells loaded with lipoids. They contain yellowish or reddish-green fluid and degenerated erythrocytes. The cysts may be situated subperiosteally or in the orbital tissue-spaces.

Similar cysts occur in the breast in localized areas of fat necrosis.

SUMMARY

Bilateral orbital cysts, in themselves, are extremely rare. The condition affecting this child is difficult to classify since it does not fall in with the normal classification of these cysts. The lack of an epithelial lining makes a histological diagnosis difficult. In the absence of a reliable history we feel that the most probable diagnosis is bilateral haemorrhagic cysts; the lack of endothelial lining tends to support this contention. The cystic fluid is most likely a transudate from the granulation tissue, mixed with break-down products of the haemorrhage.

An anterior meningocele, itself a rare finding, was present as well.

We should like to thank Dr. E. Kahn and Dr. S. Wayburne, of Baragwanath Hospital, Johannesburg, for the cooperation and great help they gave us in the care and management of this case and Dr. Wayburne especially for his excellent photographs, which we have used in this paper. Thanks are also due to Dr. R. Trope and the staff of St. John's Ophthalmic Hospital for their co-operation. We also wish to thank Dr. J. D. Allan, Medical Superintendent of Baragwanath Hospital, for allowing us to publish this paper.

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UNION DEPARTMENT OF HEALTH BULLETIN

Report for the 7 days ended 3 March 1955:

Plague, Smallpox: Nil.

Typhus Fever. Transvaal: No further cases have been reported from the Heidelberg district since the notification of 3 February 1955. This area is now regarded as free from infection.

Epidemic Diseases in Other Countries:

Plague: Nil.

Cholera in Dacca, Chalna (Pakistan).

Smallpox in Kabul (Afghanistan); Moulmein, Rangoon (Burma); Phnom-Penh, Allahabad, Bombay, Calcutta, Delhi, Kanpur, Lucknow, Madras, Nagpur, Tellicherry (India); Karachi (Pakistan); Nhatrang, Phanthiet, Saigon-Cholon (Viet-Nam).

Typhus Fever: Nil.

A REPORT ON FOUR CASES OF LAURENCE-MOON-BIEDL-BARDET SYNDROME

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The Laurence-Moon-Biedl-Bardet Syndrome has been described as a pentad comprising a pigmentary degeneration of the retinitis pigmentosa type, obesity and hypogonadism of the Babinski-Fröhlich type, polydactyly, and mental deficiency. It is estimated that only about 20% of cases exhibit the complete syndrome (Bisland). Other associated defects have been described as occurring infrequently, such as atresia ani, deafness, syndactyly and skeletal defects.

The polydactylism may affect the hands and feet and the extra digit is usually towards the fifth finger or toe. The condition is found more frequently in males and is believed to be transmitted by a recessive gene.

Most of the cases described in the literature were in Caucasian races, but cases have been reported in Indians (Kutumbiah and Abba 1942) and Negroes (Scott and Johnson 1942, Snell, A. C. 1942). In South Africa, Kessel in 1952 recorded what appears to be the first example of this syndrome, which occurred in a pure Bantu female, aged 5½ years.

The literature on this syndrome has been fairly completely reviewed by Streiff and Zentler 1938 and Burns 1950.

Four cases exhibiting this syndrome have recently been seen in the South African Bantu. Two brothers (seen by J.E.W.) and 2 sisters (seen by S.E.). The 2 pairs are not related to each other and came from different parts of the country.

THE BROTHERS

The 2 brothers, aged 14 and 12 years, Bantu, were members of a large family, the other children being normal.

Fig. 1

Family History. Other information regarding the family was extremely difficult to obtain. However, a maternal aunt is alleged to have a sixth finger on her left hand but it appears that she does not manifest other signs or symptoms of this syndrome.

Polydactyly. Both boys were born with six digits on each limb, but the elder boy had the supernumerary digits on his hands removed surgically at an early age (Figs. 1, 2 and 3).

Figs. 2 and 3

Mental Retardation. Both appeared to be very retarded mentally, but owing to their poor visual acuity it was rather difficult to assess the exact extent of their retardation.

Obesity started in infancy and was most marked in the face, abdomen and thighs. The genitalia appeared to be normal (Fig. 4).

Ophthalmoscopic Findings. The fundi in both cases presented the typical appearance of retinitis pigmentosa. The discs were of a waxy yellow colour, the arteries attenuated, and typical bone corpuscle pigment scattered in the mid-periphery. Refraction revealed no abnormality, but the visual acuity was less than 6/60 owing to early macular changes and the fields of vision were very constricted.

THE SISTERS

The two sisters, Bantu, were 17 and 10 years old. Their father noted that they had defective vision. His other 5 children were normal. No other significant family history was obtainable.

The 17-year-old girl had a full round face and a pituitary type of obesity. Striae were present in the skin of the abdomen and thighs and the breasts were pendulous. No evidence of hypogenitalism was noted. Mentally she was obviously retarded. Polydactyly was not present, but the fingers and toes showed brachydactyly.

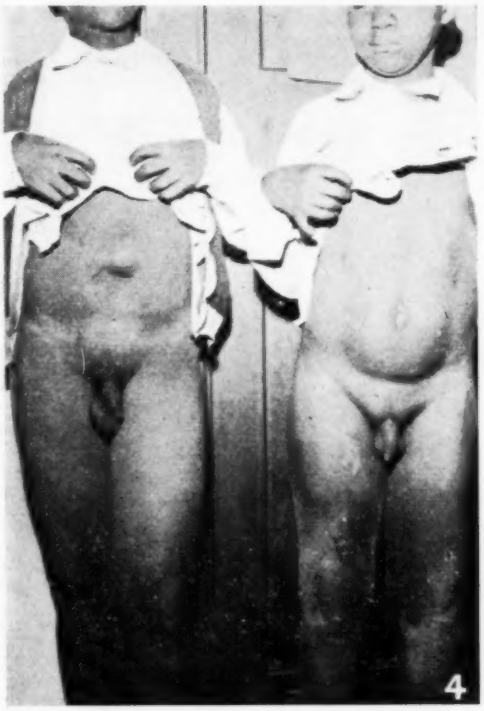

Fig. 4

The fundi presented a tapeto-retinal degeneration involving both the peripheral and macular areas. The appearance was that of an atypical retinitis pigmentosa. The media were clear. The refraction showed a myopic astigmatism. The corrected visual acuity was below 6/60 on both sides.

The 10-year-old girl had a large, round, moon face and a type of obesity similar to her sister's, but no striae were present in the skin. She had no obvious hypogenitalism. There was no polydactyly but, again, brachydactyly was a notable feature. The patient was mentally retarded.

The fundi showed an atypical retinitis pigmentosa with early macular involvement. The media were clear. The refraction showed a mixed astigmatism. The corrected visual acuity appeared to be below 6/60 on both sides.

Discussion. The two Bantu sisters represent incomplete forms of the diencephalo-retinal syndrome. They showed the typical obesity, mental retardation and tapeto-retinal degeneration. Polydactyly was absent and hypogenitalism could not be confirmed. A feature of these cases was the brachydactyly, a characteristic which does not appear to have been previously noted in association with the Laurence-Moon-Biedl-Bardet Syndrome.

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OPHTHALMIC CASES TREATED WITH TERRAMYCIN-HYDROCORTISONE OINTMENT

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The advantages of hydrocortisone in the treatment of inflammatory conditions of the eye are well known. Therapeutic action is exerted throughout all layers of the eye, and pain and photophobia are notably relieved. The danger of new blood-vessels forming across the transparent media of the eye is markedly reduced, and the destructive consequences of severe eye-inflammations are often prevented.

The wide antibacterial activity of oxytetracycline (terramycin) makes the antibiotic particularly suited to the treatment of ophthalmic infections, and it was felt that a preparation containing terramycin and hydrocortisone might offer advantages not possessed by existing medicaments.

The preparation used was a combination of terramycin (0·5%) and hydrocortisone (Cortril, 1·5%) in a bland petrolatum base. Owing to the limited number of tubes available of this terramycin-hydrocortisone ointment it was decided to treat only those cases which had proved to be unresponsive to other treatment.

Forty cases of chronic blepharitis of the squamous type were given this ointment with instructions to apply it every 4 hours. All of these cases had previously received local treatment with antibiotics, and eye drops of ½% cortisone. The blepharitis was believed to have been caused by a staphylococcal infection—some cases had superficial punctate staining of the lower corneas which according to Thygeson is due to an allergy to the toxin-producing staphylococci. It was considered that the terramycin would eradicate the staphylococci and the hydrocortisone would combat the allergic effects of the staphylococcal toxin. In 3 of the cases the treatment was stopped after a few days owing to sensitivity to the ointment. This may well have been sensitivity to the ointment base rather than to the terramycin; the hydrocortisone had no effect in preventing the allergic reaction. Of the remaining cases, 3 showed no improvement and 7 were moderately improved, whilst the remaining 27 responded dramatically to treatment. The desquamation and hypertrophy of the skin of the margin of the eyelids dis-

appeared, the new eyelashes were much healthier in appearance, and the troublesome subjective symptoms of photophobia and foreign-body sensation in the eyes also disappeared.

For blepharitis terramycin-hydrocortisone ointment seems to be much superior to any other form of therapy used in the past.

Five cases of hypopyon ulcer were treated with this ointment, and showed a spectacular response; the aqueous flare disappeared in 28-48 hours, and recovery from this serious condition was complete within a matter of days.

Only one case of trachoma was treated—a 56-year-old female European who had had the disease since childhood. Typical scarring was seen of the tarsal conjunctiva of both upper lids and both corneas. The patient suffered from severe photophobia and always wore darkly tinted glasses. After using the ointment for one week she was able to discard the tinted glasses and said that her eyes felt comfortable for the first time since she could remember.

The results of these cases suggest that terramycin-hydrocortisone ointment is a most powerful weapon in controlling acute and chronic diseases of the external eye. It is understood that the product will shortly be available as an aqueous gel-like suspension, in which form it should be more pleasant for the patient to apply and should be free of the occasional unpleasant reactions which may be due to the ointment base.

I wish to express my appreciation to Mr. Bratt of Pfizer Corporation for supplying the ointment used in this study.

AGRICULTURAL FOUNDATIONS OF NUTRITION

XII. CONCLUSION

F. W. FOX, D.Sc. (LOND.)

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. . . . For the Father of Agriculture
Gave us a hard calling: he first decreed it an art
To work the fields, sent worries to sharpen our mortal wits,
And would not allow his realm to grow listless with lethargy.

Virgil. *Georgics*

The production of the food we require to maintain life and health may be said to depend on three groups of factors which may be classified for convenience as (1) Agricultural, (2) Economic and (3) Human or Social. These articles have dealt mainly with the first but before concluding it may be well to touch briefly on all three, for they are interrelated.

1. *Agricultural.* In this broad and partial survey of the food situation in South Africa we have considered production potentials and trends in actual production in relation both to current and probable future requirements. Although this is by no means as poor a country agriculturally as is sometimes supposed, it is clear that there are various climatic and other limitations which are basic and unalterable, together with such limitations as lack of knowledge or lack of research, which though at present handicapping production can gradually be overcome. Although European farmers are growing increasing quantities of foodstuffs, and of a wider variety, it is clear that the rate of consumption has also been increasing even more quickly: indeed faster than would be expected from the increase in population. This fact led Dr. M. S. du Toit to the dramatic conclusion that 'if the demand as we know it today is to be met, the volume of production will have to be increased by 20% every 10 years'.[1] If, however, the general level of nutrition is to be raised from its present low level, the increase will need to be substantially greater, at least for some categories.

The magnitude of this task is considerably increased by the instability of our climate, since the higher our targets the more marked will be the shortages in unfavourable seasons and the gluts when the seasons are good. This tendency can be seen on a small scale at the moment, when a few good years have given rise to supplies of certain foodstuffs which are surplus to the economic demand. We have seen that a marked increase in production for certain products could be achieved: indeed, for some, such as vegetables, the amounts that could be grown are almost unlimited. But for various reasons, some of which have been discussed, it is unlikely that these increases will come about automatically: rather will it require a vigorous and wisely-planned policy, in which many interlocking factors will need to receive adequate attention.

In thus planning for a better fed nation South Africa will be joining in a movement which, though of comparatively recent origin, is now world-wide and is gaining in momentum owing to the pressure of events which elsewhere are very similar to those operating here. A realization of the need for common study and common action has given vitality to the Food and Agriculture Organization (FAO) of the United Nations, which now includes most of the nations of the world. The keynote of FAO is the necessity for the conservation and wise utilization of existing resources. The soil is the most basic of all our resources, and where, as in South Africa, it is particularly vulnerable its conservation and wise utilization become of the greatest importance. Though we have left it to a dangerously late stage, a determined effort is at last being made to retrieve the mistakes of the past, as far as this may be possible: indeed the progress made since the passing of the Soil Conservation Act in 1946 has been remarkable. The first step in the programme is the formation of Soil Conservation Districts, and the extensive area now covered by these democratically-constituted voluntary bodies, each of which is charged with the application of a conservation scheme that has been accepted in principle by the majority of the local farmers, can be gauged by examining Fig. 1 and Table I. Progress is also being made in the

TABLE I. PROGRESS MADE WITH SOIL CONSERVATION ON UNION'S EUROPEAN FARMS, OCTOBER 1946 TO JUNE 1954

Formation of Soil Conservation Districts

Number formed	*Morgen covered*	*% of total area farmed*	*Number of farms and holdings included*	*% of all farms and holdings*
529	72,632,750*	73	74,587	62

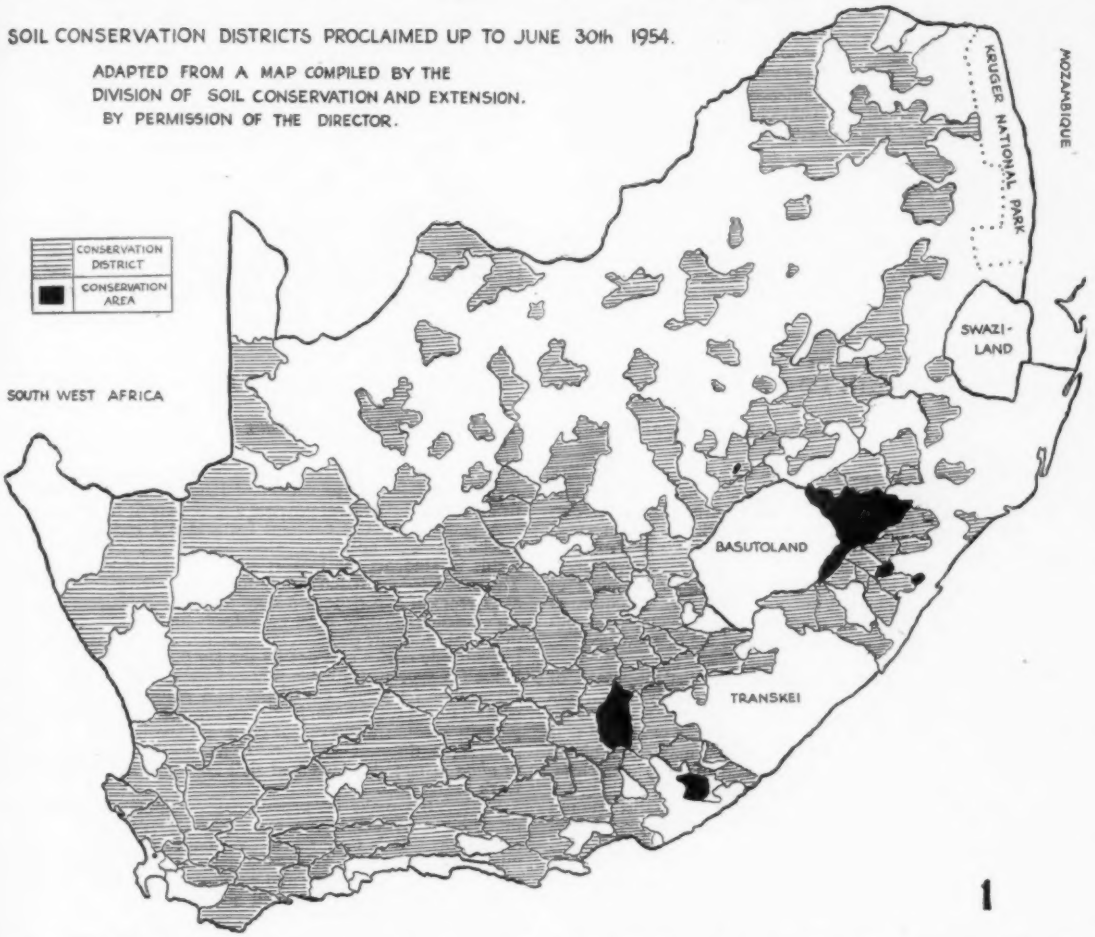
* To this must be added 1¼ million morgen proclaimed as 'Conservation Areas' for reclamation by the State.

Soil Conservation works approved or completed over the same period

Undertaken by Owners		*Undertaken by the State*	
Approved	*Completed*	*Approved*	*Completed*
90,354	43,575*	299	250†

* Value of work completed estimated at £4·7 million.
† Value of work completed estimated at £328,000—mostly in 'Conservation Areas'.

Native Reserves, especially on the Trust Farms. The second stage is the detailed planning of each individual farm, which is now well



under way. While it is true that erosion continues to gain on us the outlook in this gigantic battle is far more hopeful than seemed possible a few years ago.

2. *Economic.* But even if our conservation problems are mastered and the farmer is adequately equipped with all that science can do for him, the desirable increase in the amount of food produced will not be secured unless he can be reasonably assured of an adequate return for his efforts. Farming is a way of making a living, and although relatively prosperous today farmers do not forget that as recently as 1941 more than half even of those who owned their farms were earning an annual money income of less than £200 (see Table II). No wonder so many have given up the uncertainties

TABLE II. MONEY INCOMES* OF EUROPEAN FARMING FAMILIES IN 1941
(adapted from Report of Economic Planning Council, 1944)

	Owners	*Tenants*	*'Bywoners'*	*Employees*	*All Farmers*
Under £50	6,705	6,161	8,744	1,684	23,294
£50-99	9,434	6,316	5,184	2,214	23,148
£100-149	7,264	3,651	1,669	1,071	13,655
£150-199	5,666	2,102	668	439	8,895
Total under £200	29,069	18,230	16,265	5,428	68,992
Over £200	25,929	4,954	781	794	32,458
Total	54,998	23,184	17,046	6,222	101,450

* i.e. excluding income in kind.

of life on the land for the attraction of a stable salary in the towns. It has been well said that the uncertainties of marketing have 'brought the honourable calling of producer of food down to the level of a speculator on the Stock Exchange'. Unless greater stability can be achieved on the marketing side the farmer will continue to fear the consequences of a policy of expanding production; unfortunately the variability of our seasons makes this more difficult than it is in many other countries. Finally, it must be remembered that what is needed is to provide producers with adequate incentives, so as to secure a continuous expansion of production, *with prices to consumers which will promote a greater consumption.* This, too, is a world-wide problem and as such has been receiving the close attention of FAO based on the experience of many countries. The subject is well reviewed in the Report of the 7th Conference of FAO, held in December 1953.[2]

3. *Social.* The future of our food supplies will never be secure until farming is recognized as a highly skilled profession which calls for able and well-trained men possessing energy, versatility, and an openness to new ideas. This fundamental national industry must be in a position to compete with rival claims for such men, attracting and retaining them on its own merits. Yet we read of areas where the farms tend to become larger and larger, and of others where the work is being carried on by old men and by Natives. The causes of the relative unpopularity of farming at the present time would seem to be partly economic, partly educational and partly of a social nature. Young people complain that the life is hard, often dull, whilst the financial returns are frequently none

too good and almost always uncertain. And yet, broadly speaking, the need is for a greater measure of intensification, which means more rather than less farmers. Modern inventions have shown how farm life can be made more attractive both for men and women, but these amenities are not as yet sufficiently available to compete with the attractions of urban life. That such matters are of national importance and not merely the concern of the farming community is self-evident.

Finally, it should be noted that we have confined our attention solely to the Union of South Africa. But obviously it is necessary to think in terms of the food-production potential of the whole of Southern Africa. To do this would be to take into account the possibilities of the Protectorates and High Commission Territories, including the great Okavango Delta 'where 2-3 million acres of swamp land await drainage and development', as well as the Rhodesias with the vast developments that are linked with the Kariba and Kafue projects. J. H. Wellington's tentative land classification of Southern Africa, with map, (1953) [3] is a valuable contribution to this aspect of our problem.

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For further reading *World Population and World Food Supplies* (1954) by Sir John Russell (London: Allen and Unwin) has a lengthy chapter on South Africa and neighbouring territories.

A SUGGESTION FOR A CHANGE IN THE PRESENT CLASSIFICATION OF DOCTORS

S. A. VAN LINGEN, M.B., CH.B., D.P.H., D.T.M. & H. *Johannesburg*

Doctors are classified as general practitioners and specialists. The latter designation is a misnomer. Specialists should more correctly be called 'Localists' in contrast to general practitioners who are 'generalists'. The word 'specialist' carries an unwarranted element of praise, with a reciprocal slight to his hard-pressed colleague, the 'generalist'. Specialists and general practitioners use the same classification of disease and similar methods of investigation and treatment. The latter, however, by the nature of his work and experience, realizes more the fact of the inter-relatedness of organs and systems in the patient and the inter-relatedness of man and his environment.

He especially realizes the defect in the 'localist' approach of giving exclusive attention to one part of the body, when the cause of the disease may lie elsewhere. His greater follow-up contact also enables him to better appraise his own work and that of the specialists. The busy general practitioner may err in giving inadequate local investigation owing to pressure of work. Therefore, in order that he may be afforded the opportunity of making his valuable contribution to medicine, the senior 'generalist' should consult only and not visit. The time-consuming home visiting he can leave to his junior colleague.

The 'generalist's' main concern is the treatment of his patient as a whole, and this he can best carry out by spending more time in investigating and treating the mind of his patient. It is he who sees and appreciates the vast amount of psychosomatic disorders in general practice. (To appreciate the wide effects of emotions in producing disease of the body, see H. F. Dunbar's Emotions and Bodily Changes.)

NON-ACADEMIC POSTGRADUATE STUDY

I have personally been qualified for 16 years and for the last 5 years have been doing work of this nature. The extra time I have had to myself has enabled me, in addition to doing private research to study journals and books on psychosomatic medicine from many parts of the world. I am glad to report that I am not starving, and doing better work, in spite of the fact that I did not return to *alma mater* to hold her hand while I read a new book or journal. She gave me my basic training, for which I am grateful, but I am now able to study on my own, and can readily forgo her blessing of more academic exhibitionism. I now work in the field, and make living contact with my patients, where my work enjoys progressive improvement, but alas! not progressive remuneration.

Postgraduate teaching, learning, research, practice and organization of medicine must be flexible to allow freedom for individual development in diverse ways, without the stultifying encrustations of rigid regulations and discriminations. Postgraduate academic snobbery is harming private study and initiative which does not confer the honour of an extra title.

It is probably necessary that every doctor qualified as such should spend 5—10 years as a 'junior' general practitioner, the length of time being determined by the needs of society at the time, before he is permitted to act as a 'consulting' general practitioner, or as a specialist. The junior 'generalist's' fees should be sufficient to provide for future private or academic study requirements. Young men are better able to withstand the arduous duties inseparable from a 'visiting' general practice and to benefit from them.

A general practice contains features not included in graduate teaching. The academic education carried out by specialists, instils in students the localist and not the 'generalist' approach. The integrated approach is only acquired by the general practitioner after years of experience—it does not exist in academic education. This priceless feature must be valued, for it contains the greatest potential for future progress in medicine. This fact is not recognized in academic circles and not by the lay public. A doctor may call himself a specialist after 2 years of extra study—a general practitioner of 20 years' experience and study remains in name a general practitioner when in fact he is much more. What blindness prevails because we have not created a special title for the senior general practitioner!—of course he has not returned to pay homage to *alma mater*; his increased skill and experience come from his work in the field.

Universities make no provision for helping the future general practitioner by employing experienced general practitioners on their staffs. It is only the latter who can adequately apply the integrated approach. When the medical schools wake up to the requirements of the public and employ senior general practitioners on their staffs, I hope they will not make the specialists mistake and insist on expensive, full-time postgraduate study and a title. We need part-time courses in 'localist' and 'generalist' fields which should be quite optional and not accompanied by special titles but only a neutral description of the type of work to be undertaken. The medical schools little realize that to become an effective 'generalist', much more study and experience is required than to become an effective specialist, and that experience is mainly acquired in practice and not in lecture rooms, where the study of symbols and not the man is the main concern.

The medical schools can help, but they are not indispensable to postgraduate study. The many men in the field who make time for private study should not be penalized for not having visited them and acquired a special title. A doctor's reputation depends on the result of his work, which only the public can judge, and not on any extra academic title. The present belief that postgraduate study can only take place in academic institutions may be true for men who like lectures, have aural memories, or like to be spoon-fed. There are however many men who, with more visual memories or preferring new lines of investigation, prefer private study, individual initiative, and learning by dealing with problems in the proper context in the field.

Serfdom reminiscent of the middle ages is seen in the relationship of organized lay bodies which demand and get from defenceless individual doctors unlimited services at any time, anywhere, for any discomfort, medical or otherwise, and that for a fixed nominal monthly fee or ridiculously reduced fee per treatment. This is an example of one-way accountancy. What is happening to our much publicized dignity and freedom? Where is our right to some little leisure to develop and round off our individual personality? In modern democracy the common man has become a lord who

tyrannizes over his professional brethren. Many senior general practitioners work in the front line of the battle with no regular hours, for too little return, and with no chance of organizing their lives with a limited number of consultations per day. What they need if they are to fill the invaluable role to society of 'senior generalist' is time to observe, think and study, and time to apply this 'general' approach effectively.

THE WHOLE MAN

Julian Huxley in *Evolution in Action*, when discussing tools of living, relates generalized machanisms to potentially unrestricted improvement and progress, and specialized or localized techniques to potentially restricted improvement and possible stagnation. Further, the Indian teacher, J. Krishnamurti in his book *The First and Last Freedom* says: 'The truth lies in the whole, and not in the parts; in separateness lies conflict and confusion; in togetherness and wholeness lies truth.' Sir Henheage Ogilvie, an eminent British medical practitioner in General Surgery says: 'Consultant ranks contain many who are not wise men but "wise guys"—not men of culture, skill or wide experience, but smart technicians who can do a number of complicated tricks extremely well, provided that they are not asked to go beyond them. Compared with the general practitioner, they are small beer indeed, and it is time they were told so'.

In conclusion, I should like to say that the most urgent problem to-day is the investigation and treatment of the whole man; the 'generalist' realizes this and is most suited for the job. To turn the tables and to call him a 'specialist' instead of the 'localist' because he deals with an urgent special problem of integration, would certainly be most unfair to the 'localist', who would then be left out of the spot-light, and would probably go broke.

Bertrand Russell wisely says that in order to preserve excellence, we must become more leisurely and just, less 'progressive'. I may add that we need less spurious verbal progress and praise in 'localist' medicine, which only increases the confusion in the medical Tower of Babel—that institution for the dismemberment of man without the ability to put him together again. This exclusive 'localist' interest probably springs from the fallacy that the study of a part reveals the truth of the whole; it does not sufficiently recognise the facts of evolution and mutation. The properties of water are new and not accounted for by the sum of the properties of hydrogen alone and oxygen alone. The 'localist' study of man has its value, but the integrated study of the whole man, with its interrelatedness of body, mind, spirit, and environment, is the main means to man's total health and happiness.

I therefore propose that, in order to obviate the emotive use of a partisan classification of doctors that 'begs the question', we classify doctors with neutral descriptive terms, such as practitioners in this or that branch of medicine, e.g. Practitioner in General Medicine, Practitioner in General Medicine (Consulting), Practitioner in Ear, Nose and Throat Diseases, Practitioner in General Surgery, Practitioner in Internal Diseases, etc.

ASSOCIATION NEWS : VERENIGINGSNUUS

DR. N. L. MURRAY'S PRESIDENTIAL ADDRESS AT ANNUAL MEETING OF NORTHERN TRANSVAAL BRANCH

Delivering his valedictory address as retiring President of the Northern Transvaal Branch at the Annual General Meeting of the Branch on 8 February 1955 in Pretoria, Dr. N. L. Murray said:

I have been a member of the Medical Association of South Africa for 20 years now, and in that time many changes have come about; it is about one of these changes that my talk revolves. Initially, as a country member of the Natal Coastal Branch, and living in a district in Zululand, far removed from the cities, I was a happy man. Young, full of enthusiasm for my work, day or night, and in all weathers, I regarded medical practice as a wonderful adventure.

Dr. N. L. Murray

It is estimated that there was, at that time, one qualified doctor to about 30,000 inhabitants in Zululand, and so I can assure you that there was work in plenty for the dozen or so doctors in the territory.

I was assistant to a fine country doctor who had taken over, after World War I, from the first practitioner ever to settle in that district. In addition to private practice and the District Surgeoncy and Railway Medical Officer appointments, we attended the Institution for 400 lepers. Confinements and post-mortems often necessitated miles of trudging on foot over hilly and still malarious country, but it was, to me, a good life. My senior's anecdotes and discussions based on many years of hard practical experience, were invaluable, and I still feel that that sort of virtual apprenticeship with an elder practitioner, well versed in all aspects of general practice, is a most excellent grounding for all new graduates after leaving their intern appointments.

There were two Provincial hospitals (some 50 miles apart) in districts adjoining ours and our association with the neighbouring practitioners was excellent. There was more than enough work for all. There were no Branch Council or business meetings, and what meetings there were were for clinical discussion and consultation, and for social entertainment.

THE GROWING NUMBER OF MEDICAL PRACTITIONERS

That was 20 years ago and in a country practice. In the whole of the Union at that time there were less than 1,900 registered practitioners for a population of 9½ million; that is about one per 1,000 Europeans, or one per 4,500 of the total population. How different it is to-day!

The distribution of medical practitioners in South Africa was carefully investigated and recorded by Gillman in 1937 and her work served as a useful basis for comparison and review of subsequent statistics. Then, in September 1943, Ravenscroft of the Department of Census and Statistics, Pretoria, produced a *Survey of Registered Medical Practitioners in the Union of South Africa and their relationship to the Geographical Distribution of Population.* Shortly afterwards, in February 1944, Dr. A. Pijper wrote an interesting article in the South African Medical Journal, entitled *The Number of Doctors.*

I do not intend to present you with a detailed statistical address, but I have extracted some figures which show the trend of certain events. Although there were only 2 medical schools in the Union until quite recently, now there are 5, of which 3, between them, are turning out doctors at an astounding rate. At the end of 1946, out of 4,893 practitioners on the register, 1,357 had graduated at Cape Town and 1,174 at Witwatersrand; i.e. 2,531, or more than half, were local graduates—a good thing I am sure, which has been mainly responsible for the high standard as a whole of medical work in this country, and which we can justly be proud of. With the advent of medical graduates from Pretoria to swell the numbers; with Natal for future non-European graduates; with Stellenbosch in embryo, and with Bloemfontein more than a twinkle in its parent's eye, there will be doctors in abundance. This will doubtless be a good thing for the needs of the population at large, until saturation point is reached. In some areas it may be claimed that this has already happened. In 1937, of 689 doctors in the Transvaal, 506 were situated in the Reef towns or Pretoria with an estimated 742 persons per doctor. Today Johannesburg has about 1,400 practitioners and Pretoria about 300. The population has not increased in proportion and the concentration of

practitioners in these 2 cities alone is an indication of a mal-distribution which is rapidly increasing and creating problems which are still virtually non-existent in country practice away from larger centres.

Twenty years ago there were less than 1,900 practitioners in the whole country. There are today 7,228. It is interesting to study the development of this phase of medical evolution, because it has become the subject of so much heated discussion in certain quarters. When we examine the origin of the discomfort, we find it to be where the concentration of practitioners is highest; that is, in Johannesburg, Cape Town, Pretoria and Durban, and to a less extent, in the other provincial centres.

Johannesburg municipal area, with about 1,400 listed practitioners, has 439 specialists, Cape Town has 264, Pretoria and Durban 104 and 103, respectively. Then there is a big drop to Port Elizabeth with 39, Bloemfontein 38, East London 24, and Pietermaritzburg 19. Judging from these figures, it is no wonder that in Johannesburg and Pretoria, for example, where there is one specialist to every 3 general practitioners, there is some alleged overlapping of work amongst the general-practice and specialist groups. But there is much more to it than that. The rapid increase in the total number of practitioners for the population concerned is alarming.

(The speaker said that he had made several graphs showing the variation in the number of medical practitioners, and he displayed one showing the number registered in the Union of South Africa in the last 25 years.) In 1931 there were 1,533, and it has since increased steadily by an average of about 240 per year to 7,228 at the beginning of 1955. In 4 successive years (1949—1952) the increase was almost 400 per year. Now this is in spite of the annual depletion of about 150 by death, retirement or any other reason which normally reduces the numbers to help maintain a balance.

What is saturation point? How many doctors does the population need? This has still to be determined.

Figures taken out in 1939 (Ravenscroft's report) show that in the Union as a whole, when there were 3,266 practitioners registered, there was a ratio of one doctor per 950 Europeans, and one per 3,600 persons of all races. Now in 1955, with 7,228 doctors, I estimate that the ratio is one per 373 Europeans, and one per 1,860 total population (based on an estimated population of 2,695,557 Europeans and 13,407,000 all races, i.e. a 2% increase on the 1951 census.

The figure varies widely in different areas in the Union. In Pretoria (156,000 Europeans) it works out at one doctor per 520 Europeans, and in Johannesburg one per 272 Europeans. Imagine then one doctor in private practice trying to make a living amongst 80 European families and bear in mind that many of these are not in a position to pay for full medical service.

The limits of the doctor's income are set by the income received by the community in which he works. The total of these incomes in any locality fixes the limit of effective demand for medical services and the economic and educational elements controlling this demand vary widely between urban and rural communities.

THE NUMBER OF SPECIALISTS

In 1938, when the specialist register came into being and there were only 3,098 registered medical practitioners, there were 272 registered specialists. Today, when there are 7,228 registered medical practitioners the registered specialists number 1,120. It is obvious then that the number of specialists as compared with general practitioners is increasing, but not at anything near the rate at which the number of practitioners as a whole is increasing in proportion to the whole population, and especially the European population.

I made other graphs to show the comparison of estimated age-groups of practitioners and specialists in a given year (1948) for which figures were available. Young practitioners in the 24—29 years age-group topped the list (25%) and only 3½% were in the 55—59 years age-group.

I have also graphed the numbers registered in the various specialities. Medicine 174, surgery 143, obstetrics 94, and anaesthetics 89, head the list. It is interesting to note that the only speciality which has ever dwindled in numbers is venereology.

I tabulated every speciality in every town where there was a registration and the most significant point is the commencing shift to smaller places.

THE FUTURE

If a thorough study of the existing data were undertaken, very pertinent and practical information could be made available for members of the medical profession and kept up to date. Pointers to the mal-distribution of medical services, a guide to new practitioners and even to specialists about possible openings for practice, and many other allied items are there for the analysing. It is a pressing problem and I feel that the Medical Association is the body which should take urgent cognizance of it and act.

To quote from Dr. Pijper's article in 1944, already mentioned, 'Let medical faculties, let medical students, let parents'—and I would add, let the Medical Association in particular,—'take heed'.

The recent controversy of the G.P.-specialist relationship (where it was felt that all practitioners are equal, only some more equal than others) will be as a storm in a tea cup by comparison with the whirlwind which is there to engulf us. The navigators within the Association must look to their charts, and soon.

From a recent visit to Europe, Canada and America, I gained the impression that we as doctors are quite well off in South Africa, both in medical knowledge and skills, in material and in facilities, but that there is room for progress and improvement.

The rapidly increasing crowding of the profession which I have outlined and the resultant competition has a twofold effect. Firstly, in order to succeed in practice, every doctor has to acquire and maintain a high standard of medical art and skill. If he does not, he is soon superseded by others who have done so. Secondly, in the struggle to make a bare living in open competition from a rapidly dwindling ratio of patients per doctor, unethical and undesirable practices are liable to creep in. This factor cannot be denied in this material age; it was so even in the centuries gone by.

There are not many who can isolate themselves, as Dr. Albert Schweitzer of Lambarene has done, amongst an under-privileged people, and give up the many pleasures and amenities of modern civilization which most of us cannot happily be without. So it is not easy to say that you or I must go to places like X or Y because there are no doctors there; although according to Schweitzer the meaning of life is that wherever sacrifice, courage and service are needed, there is your Lambarene.

FREEDOM AND KNOWLEDGE

Liberty is free choice—liberty for the doctor and liberty for the patient. Human progress towards freedom is measured by the number of free choices open to the individual and his ability to choose wisely.

Liberty of the Press, of speech, assembly and religion, are but rights to choose what shall be printed and said, with whom we shall meet and what we shall believe. Dictators, monopolists, censors and propagandists seek to limit choice or deceive the choosers.

The value of freedom of choice depends, first, on the variety and quality of the choices offered and, second, on the *degree of informed intelligence of those who choose*. If choices are few or confined to inferior items, or if the individual is not able to choose wisely, or if his choice is influenced from without by selfish propaganda or by the withholding of information from him then his liberty is restricted. Such restricted or controlled choice fails to serve its social mission, which is to establish and raise standards.

If the public is to make an intelligent choice of medical services, first, that choice should be free and informed and, second, inferior services should be eliminated. The field of education of consumers of medicine is so large and so filled with difficulties that the available educational facilities are severely taxed. Organized medicine, however, should devote much of its energies and resources to this education. Unfortunately powerful interests oppose efforts to restrict the choice of medical services to those that are helpful in the diagnosis and treatment of disease. The radio and the printed page are used to urge the purchase of nostrums and to promote quackery far more than for educating the public concerning truly helpful services.

The medical profession, because medical services are a relation between patient and doctor, must lead in such educational work. I have made the point that the Medical Association should act now in collating data and making available the information gained as a guide to its own members; this could profitably be extended to health education of the public.

There is no simple solution to these problems, none at any rate that will fit in with our concepts of free people. The very fact that service and not commodities are the subject matter of medical economics make the history of medicine almost entirely different from that of industry. A doctor's educational 'capital' is a purely personal attribute; industrial capital is almost completely impersonal.

Once a doctor has embarked on his career, his investment in education, training and experience becomes a vital part of his life. Its attainment and possession afford him important satisfactions in addition to its income-producing qualities. If it becomes outgrown or obsolete, he cannot write off the balance sheet nor can he easily make use of it in any other occupation. This being so, it is for us as an Association to do even more than at present to assist our members to earn the living they are entitled to, in circumstances where the fine traditions of medicine are not endangered and where a high level of ethical practice can be maintained.

Finally, I end with the words of William Osler, which might have been said to our Association: 'Maintain an incessant watchfulness lest complacency beget indifference, or lest local interests should be permitted to narrow the influence of a trust which exists for the good of the whole country.'

POLIOMYELITIS IN THE THE UNION

Following are the returns, supplied by the Union Department of Health, of cases notified under the Public Health Act as suffering from Poliomyelitis in the period 25 February to 3 March 1955:

	European	*Non-European*
Transvaal:		
Johannesburg	6	2
Pretoria	2	
Pretoria P.U.A.H.B.	1	
Potchefstroom district	1	
Vereeniging	1	
Rustenburg	1	
Benoni	4	
Brakpan		1
Nelspruit district	1	
Total for Transvaal	17	3
Cape Province:		
Cape Town Mun.		5
Cape Town Div. Council		2
Vredendal V.M.B.		1
Alicedale V.M.B.	1	
Loeriesfontein V.M.B.	1	
Fort Beaufort	1 (fatal)	
Umzimkulu district		1
Total for Cape Province	3	9
Natal:		
Durban	9	1
Pietermaritzburg	2	
Ixopo		1
Mapumulo		1
Ramsgate	1	
Ladysmith		1
Ladysmith district		1
Richmond		1
Total for Natal	12	6
Orange Free State:		
Bloemfontein	1	
Total for Orange Free State	1	0
TOTAL FOR THE UNION	**33**	**18**

FREQUENCIES OF ELECTRICAL APPARATUS FOR MEDICAL PURPOSES

The Postmaster-General has addressed the following letter dated 15 December 1954 to the Registrar of the South African Medical and Dental Council, who has forwarded it to the *Journal* for publication:

'I have to inform you that the internationally allocated frequencies for medical purposes will become effective in the Union on 1 January 1955.

'All new equipment which is installed on or after 1 July 1955 will be required to operate on one or other of these frequencies.

'A period of two years, from 1 January 1955 will be allowed for the conversion of equipment which is at present in use.

'The frequencies in question are: 13,560 Kcs., 27,120 Kcs., 40·68 mcs., 2,450 mcs., 5,850 mcs.

PASSING EVENTS : IN DIE VERBYGAAN

Abuse of Ambulance Service. Mr. H. M. Timoney, Chairman of the Teaching Hospitals Board (Cape Town), has addressed the following letter dated 2 March 1955 to the Honorary Secretary of the Cape Western Branch of the Association:

'The attention of the Board has again been drawn to the unnecessary calls made upon the ambulance service for patients who can use other means of transport. There are not sufficient ambulances to meet the increasing demand and, as a result of ambulances being ordered by doctors for 'sitting cases' who could well use public or private transport, there are delays and dissatisfaction on the part of patients, apart from the fact that there may not be an ambulance available for an urgent case.

'The Board would be most grateful if you would draw the attention of medical practitioners to this matter through the medium of the *Journal* and ask them to co-operate by ordering ambulances only when absolutely necessary.'

* * *

Full-time Hospitals and Universities Medical Officers' Group. A meeting to consider the formation of a branch of the above Group

for the Cape will be held in the Falconer Lecture Theatre, Groote Schuur Hospital, Mowbray, Cape, on Monday 4 April 1955, at 5 p.m. All full-time Hospital and University Medical Officers are invited to attend.

* * *

Dr. Francis Bruwer Proksch, of Durban, has been elected an Associate Member of the Association of British Science Writers. This Association is a professional body whose object is to raise the standards of science writing and the status of science writers, and to further the distribution of scientific information to the general public.

Dr. Proksch was elected on account of his work 'in activities appropriate to the aims of the Association' and in view of the fact that 'he does not earn the greater part of his income from such activities'.

Dr. Proksch has been Chairman of the Public Information Committee and Press Liaison Officer of the Natal Coastal Branch of the Medical Association of South Africa, since 1948.

* * *

University of Cape Town. A refresher course for general practitioners will be held from Monday 27 June to Friday 1 July 1955, including Medicine, Surgery, Obstetrics and Gynaecology, and the Specialities (see advertisement on page xxix).

CORRESPONDENCE : BRIEWERUBRIEK

ACUTE CAUSTIC SODA INJURIES OF THE OESOPHAGUS

To the Editor: May I draw attention to one point raised by Dr. P. Marchand[1] in his excellent article on acute caustic soda injuries of the oesophagus. Dr. Marchand states that 'it is probable that tertiary contractions (of the oesophagus) are an expression of oesophageal irritation due to superficial corrosive injury'.

It is of course possible that tertiary contractions of the oesophagus may be caused in this way, but it is also true that they commonly occur in conditions in which corrosive injury plays no role. Their frequent occurrence in Parkinsonism,[2] for instance, is to-day well recognized.

Templeton [3] also noted that tertiary contractions are a regular accompaniment of achalasia. Johnstone [4] elaborated on this point and stated that they tend to occur in achalasia but not in cases of organic obstruction of the lower oesophagus, in which primary and secondary peristaltic waves are usually seen. He suggests that this may be an important point in the differential diagnosis between achalasia and organic obstruction.

There appears also to be a fairly widespread belief that gastro-oesophageal regurgitation may, through irritation, give rise to tertiary contractions. This has not been the case in our experience.[5, 6]. It is true that tertiary contractions are often seen in cases of sliding hiatus hernia with free gastro-oesophageal regurgitation, but here other factors may be at play.[5, 6]. I would also like to mention that gastro-oesophageal regurgitation was not seen in any of 17 cases of Parkinsonism recently examined at this hospital, all of which showed tertiary contractions to greater or lesser degree. There was no reason to believe that any of these cases had swallowed corrosives.

Many theories exist as to the etiology of tertiary contractions, amongst others those of Simon,[7] Fleischner,[8] Hillemand *et al.*,[9] and Barsony and Polgar.[10] None of these has been proved.

A. D. Keet, Jr.
Department of Radiology
Groote Schuur Hospital
Cape Town
4 March 1955

1. Marchand, P. (1955): S. Afr. Med. J., **29,** 195 (26 February).
2. Sheinmel, A., Priviteri, C. A. and Poppel, M. H. (1949): Amer. J. Roentgenol., **62,** 807.
3. Templeton, F. E. and Moore, P. M. (1944): J. Amer. Med. Assoc., **124,** 733.
4. Johnstone, A. S. (1946): Brit. J. Radiol., **19,** 101.
5. Van Exter, P. and Keet, A. D. (Jr.) (1953): Acta oto-rhino-laryng. belg., **4,** 377.
6. *Idem* (1954): S. Afr. Med. J., **28,** 206.
7. Simon, J. (1928): Acta radiol., **9,** 296.
8. Fleischner, F. (1932): Fortschr. Röntgenstr., **45,** 627.
9. Hillemand, P., Chene, P. and Brule, C. (1951): Arch. mal. appar. dig., Supp. 5.
10. Barsony, T. and Polgar, F. (1927): Fortschr. Röntgenstr., **36,** 593.

TRANSFUSION UNDER PRESSURE

To the Editor: In your issue of 19 February, Dr. J. Levin [1] described in great detail and with several illustrations an apparatus for obviating air embolism in positive pressure transfusions. As no reference is given, one remains with the impression that this apparatus has been designed by the author. An apparatus identical in construction, except that a blood filter was incorporated in addition, was described by Prof. Harry Schaeffer [2] almost 2 years ago.

I should like to make this one comment: In giving blood under pressure, it is infinitely safer to rely on a substantial margin between the level of the blood in the bottle and the level of the exit from the bottle than on any mechanical contraption which comes into operation (if it works effectively) only when this margin of safety has been exhausted. The blood bottle illustrated in Dr. Levin's paper suffers from the defect *inter alia* that the height of the exit tube is unknown.

From the account of a fatal case of air embolism previously reported in the *Journal* [3] it was clearly this unknown factor that was directly responsible for the accident.[4] With commercially prepared blood-bottles and giving sets such as are at present available in South Africa, one has the assurance that so long as there is an inch or more of blood left in the bottle the escape of air under pressure through the outlet tube is impossible. The time to release the pressure is *before* the bottle is empty.

M. Shapiro
P.O. Box 9326
Johannesburg
8 March 1955

1. Levin, J. (1955): S. Afr. Med. J., **29,** 184.
2. Schaeffer, H. (1953): Lancet, **1,** 952.
3. Burrows, E. H. (1954): S. Afr. Med. J., **28,** 436.
4. Shapiro, M. (1954): *Ibid.*, **28,** 680.

RESEARCH GRANTS: NATIONAL CANCER FUND

To the Editor: As a result of the response to the National Appeal for funds, a certain sum of money is available for cancer research work, and applications are invited from research workers in South Africa for grants or fellowships. Grants will be considered in terms of the following resolution adopted by the National Cancer Conference of 1951:

'As and when funds become available, steps be taken with a view to sponsoring research in relation to cancer, especially into those forms which are particularly prevalent in South Africa, in association with or through provincial hospitals, universities and such other institutions throughout the Union as may be agreed to from time to time'.

Applications must be made on the prescribed form, in triplicate. Forms and the Regulations governing Grants and Fellowships are obtainable from the Secretary at the above address.

M. Collis
Secretary
National Cancer Association of South Africa
P.O. Box 2000
Johannesburg
3 March 1955